



ESD Protection Diodes with Ultra–Low Capacitance

General Description

The FTV10BUL2 is designed to protect voltage sensitive components that require ultra- low from ESD and transient voltage events.

Excellent clamping capability, low capacitance, low leakage, and fast response time, rmake these parts ideal for ESD protection on designs where board space is at a premium. Because of its low capacitance, it is suited for use in high frequency designs such as USB 2.0 high speed and antenna line applications.

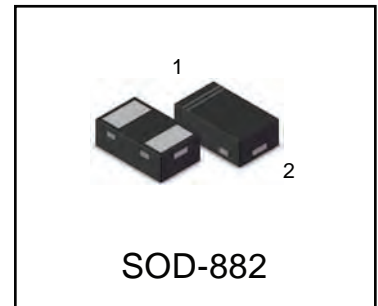
Specification Features:

- Ultra Low Capacitance 1.5 pF
- Low Clamping Voltage
- Stand–off Voltage: 11 V
- Low Leakage
- Response Time is Typically < 1.0 ns
- IEC61000–4–2 Level 4 ESD Protection
- This is a Pb- Free Device

Mechanical Characteristics:

CASE: Void- free, transfer- molded, thermosetting plastic
Epoxy Meets UL 94 V- 0

LEAD FINISH: 100% Matte Sn (Tin)



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
IEC 61000–4–2 (ESD) Contact Air		±10 ±15	kV
Total Power Dissipation on FR–5 Board (Note 1) @ TA = 25°C	P _D	200	mW
Storage Temperature Range	T _{stg}	–55 to +150	°C
Junction Temperature Range	T _J	–55 to +150	°C
Lead Solder Temperature– Maximum (10 Second Duration)	T _L	260	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied.

Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

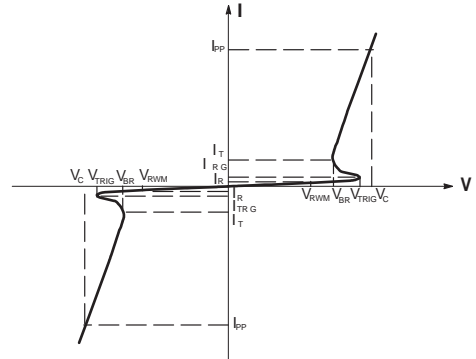
1. FR–5 = 1.0 x 0.75 x 0.62 in.

ORDERING INFORMATION

Device	Marking	Shipping
FTV10BLUL2	M1	10000/Tape&Reel

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted)

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse standoff voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
V_{TRIG}	Reverse trigger voltage
I_{TRIG}	Reverse trigger current



Bi-Directional TVS

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted)

Device	Device Marking	V_{RWM} (V)	I_R (μ A) @ V_{RWM}	V_{BR} (V) @ I_T (Note 2)	I_T	C (pF)	V_C (V) @ $I_{PP} = 1.65$ A (Note 3)	V_C
		Max	Max	Min	mA	Max	Max	Per IEC61000-4-2 (Note 4)
FTV10BLUL2	M1	10	1.0	12	1.0	1.8	24.5	Figures 1 and 2 See Below

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.
- Surge current waveform per Figure 4.
- For test procedure see Figures 3.

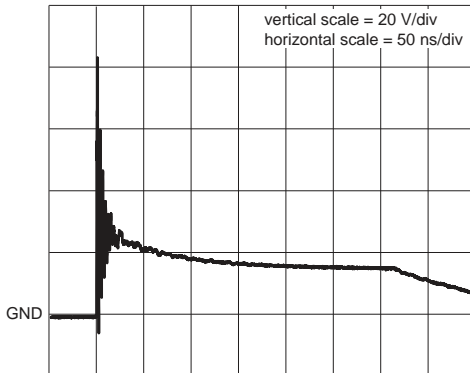


Figure 1. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

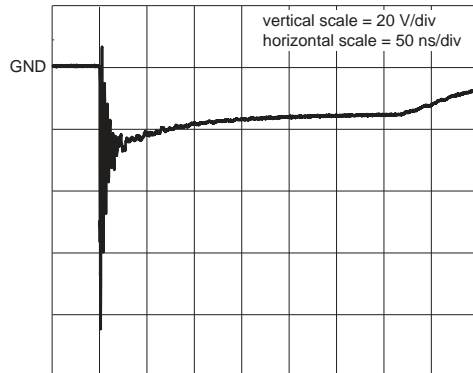


Figure 2. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2

IEC 61000-4-2 Spec.

Level	Test Voltage (kV)	First Peak Current (A)	Current at 30 ns (A)	Current at 60 ns (A)
1	2	7.5	4	2
2	4	15	8	4
3	6	22.5	12	6
4	8	30	16	8

IEC61000-4-2 Waveform

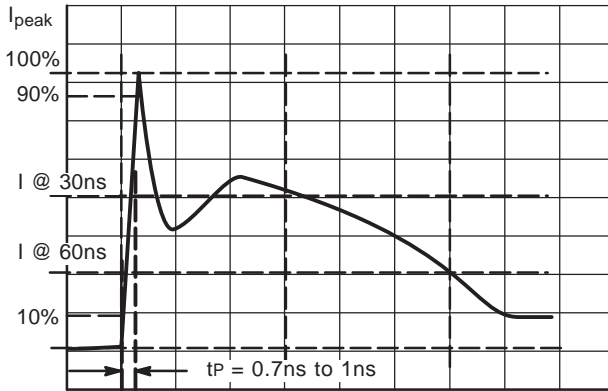


Figure 3. IEC61000-4-2 Spec

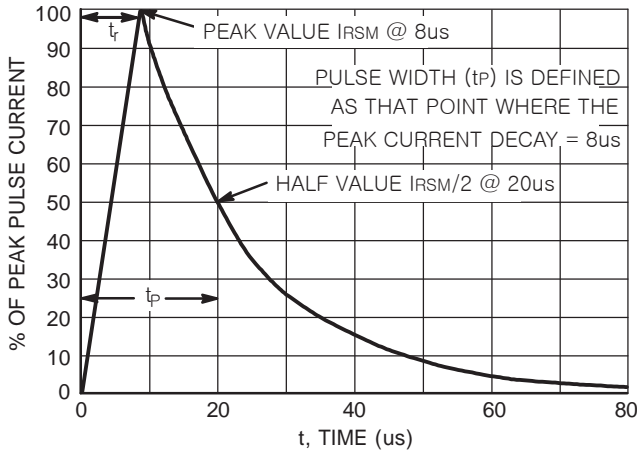


Figure 4.8 X 20us Pulse Waveform



SOD-882

DIMENSION OUTLINE:

Unit:mm

